

# Socio-Economic Implications of Climate Change for Bangladesh

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**I**NCREASES in the production of carbon dioxide and other greenhouse gases through industrial and agricultural practices, is believed to affect climate by altering the Earth's greenhouse effect. Modelling these processes suggests that mean global temperatures for Bangladesh may rise by 1.5 to 1.8°C by 2050. In response to global warming, sea level may rise by about 30 cm. Modelling also suggests that these changes would increase annual rainfall in Bangladesh. The effects on winter rainfall are however uncertain.

Climate changes such as these would affect plant and animal growth in Bangladesh. Some effects would be beneficial, such as increased CO<sub>2</sub> enhancing plant growth; some would be detrimental, such as increased flooding, riverbank erosion and possibly cyclones. Given these adverse effects, what are the socio-economic implications for Bangladesh?

**Climate-Society Interaction**  
A change in climate will affect natural resources, such as water, forests, and grasslands. Changes in natural resources will have social and economic effects; some beneficial, some detrimental. For example, increased rainfall might increase the amount of water available for irrigation (a beneficial effect on agriculture), but increase the rate of soil erosion and leaching (a detrimental effect on agriculture). These impacts on agricultural resources (plant and soil) would in turn affect the social and economic circumstances of farmers and, thereby, other socio-economic sectors dependent upon their production.

The socio-economic effects of climate change therefore arise from interactions between climate and society and how these in turn affect both natural and managed environments. Traditionally, in Bangladesh, climatic variations have provided opportunities (resources) and imposed costs (hazards), depending on how society adapted to the environment. Thus, a bountiful floodplain rice-growing system, finely tuned to seasonal climate variations, is often disrupted by floods, droughts, and cyclones. In the future, the extent to which Bangladesh will be affected (whether adversely or beneficially) will depend on the future technological, demographic, and socio-economic trends and how they influence Bangladesh's ability to adapt in order to strike a new balance between resources and hazards.

**Vulnerable in Transition**  
Bangladesh is a newly developing country in transition from being a traditional rice-growing society. In the drive for modernisation, evolving technologies and economical and social structures alter existing systems and make many sectors of, and groups in, soci-

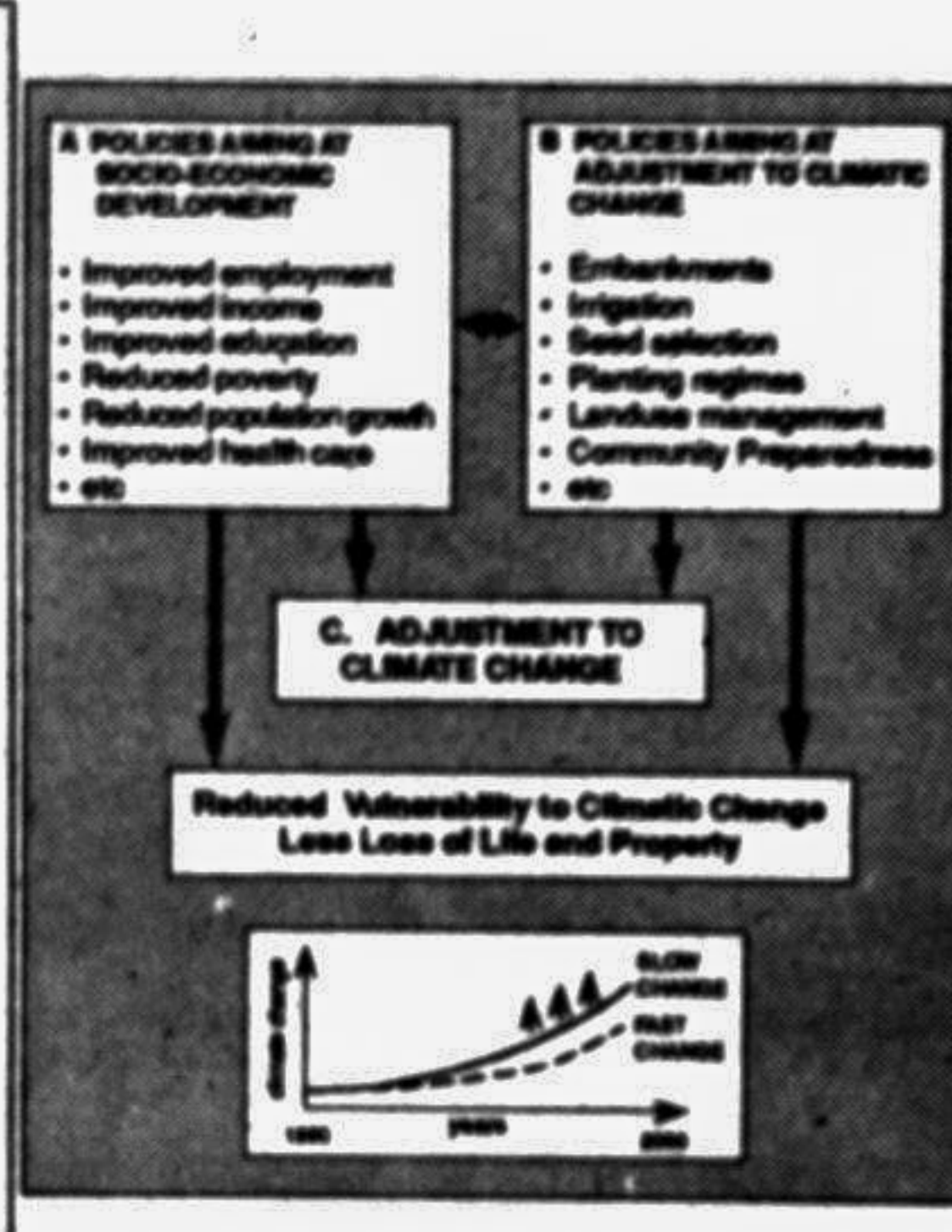
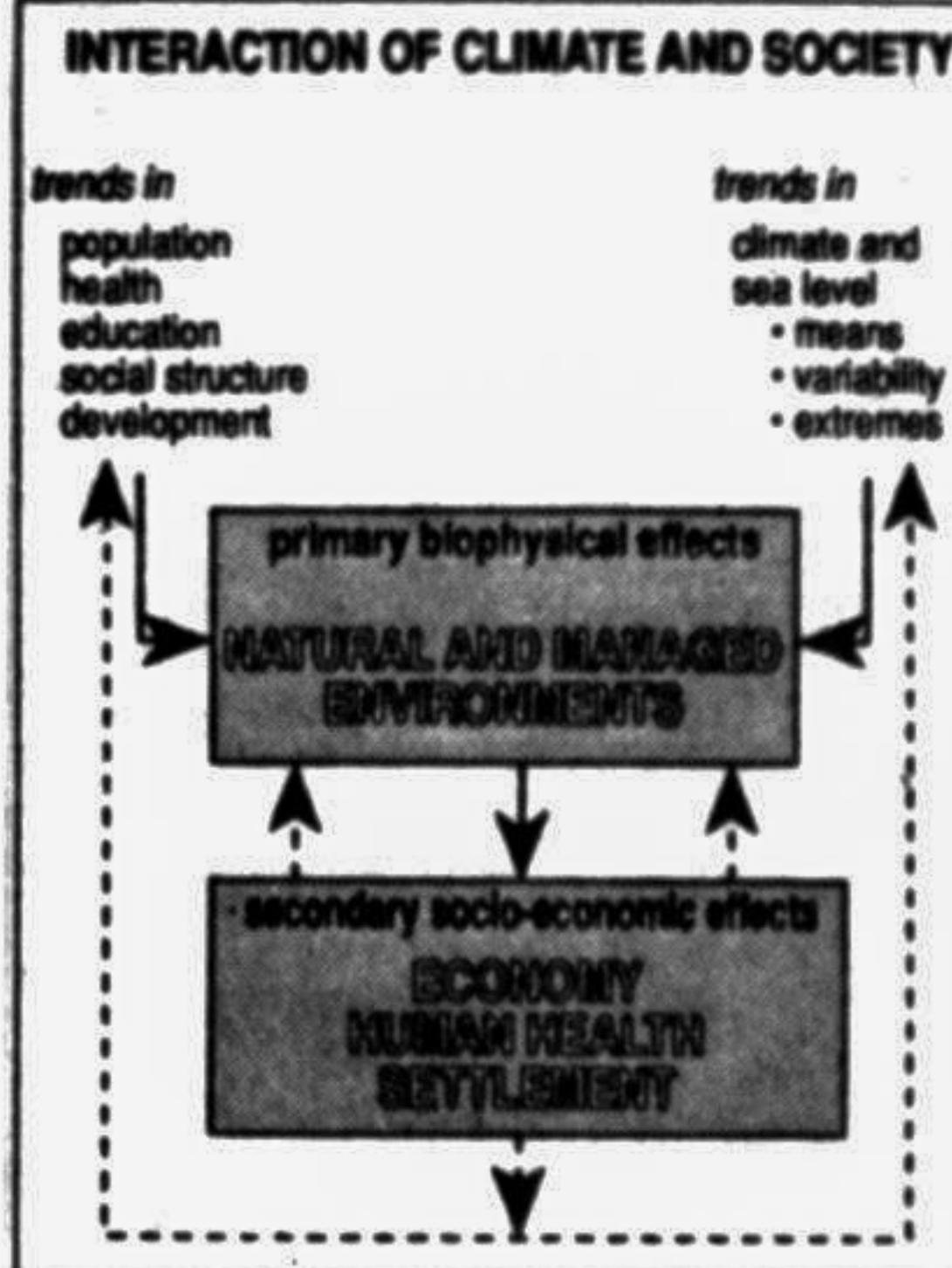
ety more vulnerable to significant variations in climate and sea level. For example, large scale environmental interventions such as flood control and irrigation may buffer people from lesser and more frequent events thereby enhancing the resource base. On the other hand, protected areas will remain at threat from supra design events which may be made more likely under a changing climate, even though other benefits may accrue from climate change, such as improved crop production. In the long term, Bangladesh's vulnerability may, however, depend more on the direction of technological, demographic

tional risks of climate impacts more akin to other urbanised countries, such as heat stress, urban flooding, and urban drought. Overall, the trend of high population growth in Bangladesh should increase vulnerability to climate and sea level change.

**Migration, Employment and Climate Change**  
Escaping adversity due to lost land and employment lies behind most migration. Permanent movements are from densely settled core to less dense periphery, and from rural to urban areas. Seasonal moves are an increasing trend. Exposure to natural disasters

on a seasonal basis, the linkages between climate, nutrition and disease are apparent. Improvements in health care and education, as well as food production, would help buffer Bangladesh against the ill-effects of future climate change. So too will improvements in safe water supplies and waste disposal systems.

**Water — and Vector-borne Diseases**  
Temperature, precipitation and humidity influence the incidence of water-borne (and air-borne) diseases. Bacteria, parasites, and their vectors may breed faster and live longer in warmer, wetter



economic and social trends than on the rates of climate and sea level change. This is because the pace of change in society is likely to be much more rapid than for climate and sea-level change.

**Population, Settlement and Climate Change**

Since 1965, the population of Bangladesh has doubled to 110 million. The medium UN projection gives 235 million by 2025AD and 305 million by 2050AD. In rural areas the population density may increase by over half by 2025 AD. The high density rural areas will continue to supply migrants to low density areas and to cities. The exposure of people to climatic extremes will persist and is likely to increase as more intense use is made of high risk areas. The urban population is projected to grow at a faster rate, about 5 per cent per year. This increasing concentration of people in large urban areas could increase the risk of catastrophe from rare climatic events and is likely to create addi-

depreciates marginal landholdings and triggers many people to relocate. Limited opportunities mean many migrants relocate not only in areas at risk from climate extremes (drought-prone western districts, cyclone-prone coasts, and active floodplains), but also from adverse social and environmental conditions. In general, migrants are particularly susceptible to environmental disruptions, because they lack supportive infrastructure and employment. A continuation of high migration rates is likely to aggravate the potential socio-economic impact of climate and sea level changes in future.

**Health Care and Education**

A population that is healthy and educated is better able to avoid poverty and the adverse effects of climate variations. While recent trends in improved health care and education in Bangladesh are encouraging, poverty and malnutrition remain rife, lowering the resistance of large segments of the population to disease. Even

conditions in Bangladesh. However, climate is a necessary, but not sufficient condition for these diseases. Sanitation tied to poverty is the main condition for diarrhoeal diseases (like cholera). Drought and flood facilitate their transmission. Rainfall and poorly maintained human settlements facilitate breeding of mosquitoes, and migrants from infected forest areas and/or migrants returning to the plains is a main reason for its resurgence on the lowlands. Climate change in future could encourage such diseases, especially if economic development is impeded.

**B-A-U Scenario**

If the recent past becomes "business-as-usual" in future, low economic growth, mass poverty, and burgeoning unemployment will persist. If accompanied by a pattern of extreme natural events and hazard adjustments similar to those of the recent past, loss of lives and property will escalate. Should adverse climate and sea level changes occur under this "business as usual"

scenario, then the number of people at risk will increase, especially among the marginalised poor, and catastrophic losses will become more frequent.

**Optimistic Scenario**

Rather than focus on "business-as-usual" investment and GNP growth targets, an "optimistic" scenario would emphasise productive employment targets aimed at releasing the creative energies of the country's poor people at the grass-roots level. In this future of Bangladesh, a new market economy may evolve in which the poor are mainstreamed through an employment-based strategy anchored on: basic education; skill training; and organisational support at local level. These social adjustments would be accompanied by an improved mix of structural and non-structural measures aimed at reducing the susceptibility of society to natural hazards — measures that would prove helpful should climate and sea levels change in future.

**Knowledge Gaps**

What lack of knowledge impedes the ability of Bangladesh to better adapt to environmental change and vulnerability? First, in some areas there is a lack of fundamental knowledge concerning the relationship between climate variation and socio-economic effects. Second, there is a need to examine the range of adaptive measures that are available for coping with environmental adversity. Third, how, and to what extent, are traditional technologies being adapted to changing socio-economic conditions. Fourth, there is a need to examine how customary behaviour is being modified in response to changing social and environmental conditions. Fifth, research is needed on the various forms of migration and resettlement of the landless to help anticipate the likely dimensions of problems that may arise if climate extremes worsen and sea-level rises. Sixth, there is an urgent need to develop means of empowering the landless and poor with entitlements to resources to ensure their resiliency in times of scarcity.

**What Should be Done?**

Fulfilling these needs requires a programme of interdisciplinary research (integrating social sciences and natural sciences) aimed at developing an optimum strategy for reducing vulnerability to climate extremes. The outcomes of this research would aim at providing decision makers with an indication of priorities for various kinds of activities for preparing against the adverse effects of climatic variation and change.

The present article is executive summary of a study on 'Socio-economic Implications of Climate Change for Bangladesh', carried out by the authors.

# Fuel for Asia's Growth Furnace

The world's fastest growing region is also getting increasingly dependent on oil. Yojana Sharma of Inter Press Service reports.



**T**HE centre of gravity of the world oil market has shifted from Western industrialised countries to Asia as the region imports more fuel to fire the furnaces of its booming economy.

But Asian governments are worried that this means increasing dependence on the Organisation of Petroleum Exporting Countries (OPEC), particularly Middle Eastern producers that supply 75 per cent of Asian imports of oil.

Including Japan and Australasia, the Asia-Pacific is now the second largest oil consuming region in the world with a total demand of 15.9 million barrels per day last year.

By the turn of the century, it is projected to overtake the United States to become the largest oil consumer in the world, says economist Ranjan Pal of Jardine Fleming Broking in Hong Kong.

But he warns that Asia itself is becoming more vulnerable than other regions to threats of higher oil prices or supply disruptions.

Last year, more than 70 per cent of the oil consumed in Asia was imported, and the figure is projected to climb to 85 per cent by the year 2000. Three-fourth of the imports come from the Middle East, and this may rise to 90 per cent by the end of the century.

"In terms of security of supply, Asia will be in an even more precarious situation should there be another disruption like the Gulf War," says Pal.

"OPEC will be critical for Asia and Asia will be critical for OPEC," former OPEC secretary general Subroto also said at the organisation's 97th conference in Ball in November.

Fast growing Asian economies are expected to be

instrumental in propping up flagging OPEC oil prices, giving them some bargaining power over the price tag slapped on the commodity.

Conversely, any dramatic rise in OPEC prices could severely affect growth prospects in Asia because the region's own oil production is unable to keep up with its rocketing demand. Last year alone, Asia accounted for almost a quarter of the world's demand for oil but supplied just a bit more than 20 per cent of it.

In addition, the supply and demand imbalance is widening rapidly with consumption growing at 4.7 per cent a year in the last decade, running far ahead of output growth of 2.7 per cent.

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At the end of 1993, Asia had only 4.4 per cent of the world's reserves.

In particular, Chinese oil product imports are expected to more than triple over the next decade and its insatiable demand would push oil prices higher throughout Asia says Feridun Fesharaki, head of energy programmes at Hawaii's East-West Centre.

China is already the world's fourth largest oil consumer with demand growing at 10 to 15 per cent a year, fueled by fast economic growth. Oil product imports estimated at about 340,000 barrels a day,

this year are expected to surge to 850,000 by 2000 and 1.4 million by 2005, if no new refineries are opened up in the country.

Refinery development is being hindered by Chinese reluctance to allow foreign investment in the sector. Points out Michael Cannon of the Asia Pacific Energy Centre: "There is enough oil in China to make the products that it needs but it is not in the right place."

China has opened up the Tarim Basin in Xinjiang province for development but infrastructure from this area to major industrial areas is poor, and the Tarim Basin project is unlikely to have any major impact on China's oil imports before 2004.

Meanwhile, the oil crunch is seen in part as contributing in the recent thaw in relations between China and Vietnam. There are indications of an agreement between the two countries on joint exploration of the oil-rich South China Sea after the visit to Vietnam this week by Chinese President Jiang Zemin.

The experts add that the lifting this year of the US trade embargo against Hanoi has led to rapid development of oil resources in Vietnam by US-based oil companies. In October, Vietnam for the first time began selling oil on the international spot market.

Much of Vietnam's oil is sold to Japan to earn valuable foreign exchange. But Vietnam's output of some 130,000 barrels a day is considered too small to make a dent in demand in Asia.

According to Fesharaki, it would be the way China handles its energy sector — particularly the amount of investment in developing exploration and refining — that will be crucial not just for China but for the entire Asia-Pacific.

# Dwarfing the Disability



The first ever National Assembly of the Disabled Scouts of the Dhaka Division was held at Mohammadpur Government High School in the city on January 19. Dhaka Divisional Commissioner Maniruzzaman Miah inaugurated the function. The Dhaka Deaf School, Kalyani School of the Mymensingh Disabled Foundation, ABC Blind School of Mymensingh and fifty five mentally retarded students from six units of society for the Mentally Retarded of Bangladesh took part in the function.

# Fifth Round Table for Development Communication

by Shoeb Shazzad Khan

**T**HE 5th Round Table for Development Communication (RTDC) will be held in Chiang Mai, Thailand from 25 to 28 January 1995. This will be organized by Worldview International Foundation (Worldview). Worldview Bangladesh is going to take part in this 5th RTDC.

RTDC is an annual assembly of researchers, practitioners and development experts to exchange innovations, ideas and experiences on development communication in participatory manner aiming at supporting the development process going on throughout the world. The RTDC intends to improve communication programmes and bring forth a common framework of approaches to communication for global development.

The first RTDC was held at Unicef headquarters in New York in 1989, the second in Ottawa, Canada in 1990, the third at FAO headquarters in Rome, Italy in 1991 and the fourth in Lima, Peru in 1993. The fifth will be held in Chiang Mai, Thailand from 25 to 28 January 1995.

Although the RTDC has been in existence a little more than five years, it has contributed extensively to the recognition of the importance of communication, and discussed analytically the problems regarding communication for development in an informal and flexible manner. Professionals involved in development activities throughout the world regard RTDC as the most important international event in the field of development communication.

Development communication, and in particular participatory communication — which is also the key approach of Worldview — is regarded as a means to people's participation in the development process. Participation requires the principle of equity to be applied at every stage of development — from programme formulation and planning to

the distribution of the fruits of development. People must be regarded as the subject as well as the motive force of development who should become the active participants in all development programmes.

These are some important aspects which will be discussed at the Round Table. In addition to techniques and methods in the use of participatory communication, the Conference will also deal with new technologies which are fast changing the communication structures and patterns, and global broadcasting.

For two decades, development theorists have argued and advocated the cause for people's participation as the key to successful developmental programmes. Very unfortunately, this has remained as a theoretical benediction in black and white rather than an active practice.

However, very few non-governmental organizations have attempted to adopt the idea of people's participation as effective substance and form. It has been observed that where the principle of people's participation has been adopted and applied seriously and persistently, there has been a noteworthy and praiseworthy change in conditions and prospects of the people who have taken part in this process. Virtually, participatory communication is an answer to many problems in the development process. The Round Table for Development Communication will therefore be very vital and effective in dealing with the issues which affect people's lives and their future horizons.

As the organizer of the fifth RTDC, Worldview International Foundation (Worldview) will coordinate the Round Table to include trips for the study of successful communication projects. It is important and noteworthy that an event like

this is exclusively based on grassroots experiences and practical outcome of participatory communication. Likewise, the RTDC will be organized in a participatory format and style with the aim of activating every participant as a resource person in the proceedings.

Worldview Bangladesh, an affiliated body of Worldview International, is participating the Round Table as a full-fledged national NGO. The outcome of the RTDC will positively germinate some novel strategies by dint of which Worldview Bangladesh can strengthen its programme activities, both new and already in existence, in the field of development communication.

Worldview Bangladesh, which is already a synonym of development communication in the country, is working in the field of development utilizing media communication as a key approach for sustainable programmes. One of its singular aims in Bangladesh is to effectively employ all forms of communicational methods, both traditional and modern, in support of human development towards sustainability, and for meeting basic needs of the underprivileged in the development process. Initially Worldview started working in Bangladesh in 1981 as part of Worldview International Foundation (Worldview) headquartered in Sri Lanka, to assist Bangladesh Institute of Distant Education (BIDE), now the Bangladesh Open University (BOU), in producing educational programmes for Bangladesh Television. A couple of years later a number of projects also were initiated. Now Worldview is working as a full-fledged national NGO with the view to decentralizing its activities in the community level taking up more rural based programmes.

At present Worldview Bangladesh is running an elaborate media oriented

'Comprehensive Nutrition and Blindness Prevention Programme (CNBPP)' in the northern parts of the country. This rural based programme has been proved to be so successful that it is now being replicated in different south-east Asian countries. The CNBPP is conducting a motivational programme through different media supports for changing the food habit of the rural people so that they can take more green vegetables by growing vegetables on their own at their homesteads. This prevents night blindness permanently within the community.

Worldview Bangladesh has another rural based project titled 'Participatory Video Unit (PVU)' which enabled the village people to implicate themselves with the video media, once considered to be a source of recreation only for the well-to-do section of the country. But the media communication approach of Worldview Bangladesh has brought forth a revolutionary change by presenting this video media as an effective tool for sustainable development. Under the PVU project Worldview has assisted the rural people to identify their own problems, to record the problems in the videos (by themselves) and use the video to solve the problems in participation of the respective community people.

Apart from these rural based programmes Worldview Bangladesh has a modern and sophisticated media setup within the project of Media Production Units (MUP) to produce developmental and motivational videos. Until today the organization has produced more than 300 educational and motivational videos for different GOs, NGOs, Television Programmes, both national and international awards including a TransTel first prize from Germany.